

REMARKS

Based on the above amendments and the following remarks, this application is deemed to be in condition for allowance and action to that end is respectfully requested.

Information Disclosure Statement

Applicant has submitted herewith for consideration by the Examiner PTO/SB/08A listing all patents and publications listed in the specification and additional prior art references.

Response To Drawing Objections

Applicant submits a set of formal drawings that addresses all of the Examiner's objections to the previous drawings. Specifically, Figure 1 is designated by a legend such as --Prior Art--; the interferometer shown in Figures 2A and 2B is designated by the number 1; and the adjustable spacer shown in Figures 1A and 2B is designated as A. No new matter has been added. Applicant respectfully submits that in view of the formal drawings provided herewith, Examiner's objections to the drawings are overcome and withdrawal thereof is respectfully requested.

Response to Claim Rejections - 35 U.S.C. § 103

The Examiner rejected claims 1-41 under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 3,758,194 (Daval) in view of U.S. Patent No. 3,551,051 (Salgo).

Claims 1 to 41 have been canceled and replaced with a new set of claims, claims 42 to 133. These claims more particularly define the invention in a patentable manner over the cited references. No new matter has been added.

More particularly and based on the following remarks, Applicant respectfully submits that the amended claims in this application are not rendered obvious under 35 U.S.C. § 103.

To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Third, the prior art references (or references when combined) must teach or suggest all the claim limitations (i.e., the subject matter of the claims). The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on an applicant's disclosure in the specification. See In re Vaeck, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991).

First, Applicant respectfully submits that there is no suggestion or motivation, either in Daval and Salgo themselves, or in the knowledge generally available to one of ordinary skill in the art, to modify Daval and Salgo or to combine reference teachings to make Applicant's claimed invention.

Second, Applicant respectfully submits that Daval and Salgo, even if combined, fail to disclose, either expressly or inherently, the subject matter of the claims.

The amended claims of this application cover an embodiment of the present invention that comprises, in pertinent part, an optical device having the following elements:

(a) a first substrate having a very low absorption loss. The first substrate includes an inner surface and an outer surface with the inner surface thereof having a very high reflective coefficient of r_1 ;

(b) a second substrate having a very low absorption loss. The second substrate includes an inner surface and an outer surface with the inner surface thereof including: i) a transmission-optimized optical portion to facilitate input of light beams into the device and ii) a reflective portion having a reflective coefficient of r_2 wherein r_1 is greater than r_2 . The outer surface of the second substrate has a transmission coefficient of t to facilitate light beams in and out of the device. The second substrate is mounted parallel to the first substrate with respective inner surfaces facing each other; and

(c) a beam collimating element for guiding an input light beam to travel through the optical portions of the second substrate to: 1) hit a first point on the inner surface of the first substrate, 2) reflect off of the first point, at a near normal incidence angle, towards a second point on the reflective portion of the inner surface of the second substrate, the second point spaced from the optical portions so as not to interfere with the input light beam, 3) hit the second point and i) partially reflect off of the second point towards the reflective portion of the inner surface of the second substrate such that there is no interference of reflected beams within the device and ii) partially travel through the respective surfaces of the second substrate to generate the one of the output light beams.

Applicant has found that the claimed invention advantageously provides for, among other things, output beams being generated as a result of multiple reflections with negligible diffraction losses of the input beam.

Daval in view of Salgo does not teach or suggest the aforementioned features of the claimed invention.

Finally, the Examiner asserted, without additional support, that several claim limitations are well known in the art. For example, with regard to original claims 13, 10, 30, the Examiner contends, "using a computer for the displacement transducer and the controller is well known," therefore "the inclusion of one to the device is well known in the art".

With regard to original claim 13, the Examiner contends "it would be obvious to one of ordinary skill in the art at the time the invention was made to set the substrate gap to approximately one wavelength as it is a matter of design choice".

As for original claims 8, 18, 28, and 38, the Examiner contends, "making a spacer a piezoelectric control voltage device is well known."

As for claim 1, the Examiner contends, "as for the wave guide, using a fiber optic as a guiding device as disclosed in the application is notoriously well known in the art."

As for original claims 12, 32, and 41, the Examiner contends, "the use of an optical fiber for the input aperture of the collimated output light is well known."

However, "to imbue one of ordinary skill in the art with knowledge of the invention...when no prior art reference or references of record convey or suggest that knowledge, is to fall victim to the insidious effect of a hindsight syndrome wherein that which only the inventor taught is used against its teacher." See W.L. Gore & Assocs.

Inc. v. Garlock, Inc., 220 U.S.P.Q. 303 (Fed. Cir. 1983).

Here, the Examiner states, without additional support, that it would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to modify the cited references, Daval in view of Salgo, to produce what the Examiner has interpreted as Applicant's claimed invention. However, the references of record do not support the Examiner's statements.

Furthermore, while it is true that an obviousness rejection may be based in certain instances on common knowledge in the art or "well-known" prior art, the Examiner may only take official notice of facts outside of the record, which are capable of instant and unquestionable demonstration as being "well-known" in the art. See In re Ahlert, 424 F.2d 1088, 1091, 165 U.S.P.Q. 418, 420 (C.C.P.A. 1970); In re Seifreid, 407 F.2d 897, 160 U.S.P.Q. 804 (C.C.P.A. 1969) (the Examiner's statement of that which is common knowledge in the art is supported by the references of record.).

Here, the knowledge within the art at the time of Applicant's claimed invention is not of such notorious character that official notice can be taken. Facts constituting the state of the art are normally subject to the possibility of rational disagreement among reasonable [people] and are not generally not subject to the taking of [official] notice. See In re Eynde, 480 F.2d 1364, 178 U.S.P.Q. 470 (C.C.P.A. 1973). Thus, in this case the Examiner should cite a reference in support her position as to the level of skill in the art at the time of the application's filing.

Finally, if rote recitation of the level of skill in the art, without more, could suffice to supply the requisite motivation to combine or modify, more sophisticated scientific

fields as in the present invention would rarely, if ever, experience patentable technical advance. See In re Rouffet, 149 F.3d 1350, 47 U.S.P.Q.2d 1453 (Fed. Cir. 1998).

Accordingly, based on the above remarks, Applicants respectfully submit that the claimed invention is unobvious over the applied prior art. More particularly, the pending claims recite limitations that distinguish over Daval in view of Salgo under 35 U.S.C. §103. Accordingly, the rejection under 35 U.S.C. § 103(a) is overcome and withdrawal thereof is respectfully requested.

CONCLUSION

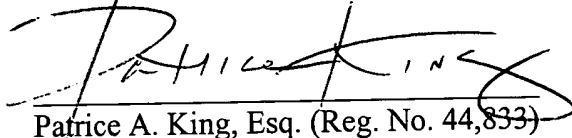
In view of the foregoing amendments and remarks, it is respectfully submitted that the application is in condition for allowance and accordingly, allowance of the application is respectfully requested.

Should the Examiner require or consider it advisable that the specification, claims and/or drawings be further amended or corrected in formal respects in order to place the case in condition for final allowance, then it is respectfully requested that such amendment or correction be carried out by Examiner's Amendment and the case passed to issue. Alternatively, should the Examiner feel that a personal discussion might be helpful in advancing this case to allowance, the Examiner is invited to telephone the undersigned.

The Commissioner is authorized to charge all required fees, including any extension and excess claim fees, or credit any overpayment to Deposit Account 06-0923.

Applicant claims small entity status. See 37 C.F.R. 1.27.

Respectfully submitted for Applicant,

A handwritten signature in black ink, appearing to read "Patrice A. King", written over a horizontal line.

Patrice A. King, Esq. (Reg. No. 44,833)

GOODWIN PROCTER LLP

7 Becker Farm Road

Roseland, New Jersey 07068

973 992 1990



MARKED UP COPY OF SPECIFICATION

In a preferred embodiment of the present invention, an adjustable spacer [A] is located between the optical plates 201 and 202. The selected adjustable spacer medium [A] adjusts the spacing between optical plates 201 and 202 while maintaining their parallel relationship with each other. Accordingly, one preferred choice for the adjustable spacer is a conventional high-accuracy piezo-ceramic actuator. As known in the art, the piezo-ceramic actuator typically comprises ceramics 226 and 227, electrodes 228 and 229 connected to a terminal 230, and electrode 231 connected to a terminal 232. A control voltage, such as a piezo-electric control voltage UPE, is applied to and between the terminals 230 and 232, in order to adjust the spacing d between the reflective layers 203 and 204 and by consequence the EOPD.